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ABSTRACT

An economic impact study was conducted to determine the short- and long-term impact of Caldwell Community College and Technical Institute (CCC&TI) on the local economy. Using the Salley model, direct economic impact was determined based on the collection of institutional enrollment, payroll, and purchasing data; surveys and estimations of faculty/staff and student spending; calculation of the local multiplier peculiar to Caldwell County; calculation of employee equivalent of student spending; and determination of CCC&TI's total impact on community income. In addition, available data were analyzed to assess CCC&TI's indirect impact on areas such as unemployment, wages, and reduced industry training costs. Study findings indicated that: (1) full-time students spent an average of $5,665 locally, while faculty and staff spent an average of $13,628; (2) direct spending of faculty/staff and students totaled $6,354,272; (3) the total impact of CCC&TI was calculated at $9,658,494; (4) the local multiplier was found to be 1.52, indicating that for each dollar spent, an additional $0.52 of income was generated; (5) 86% of the full-time students and 72% of the part-time students said they would be enrolled elsewhere if the college were not located in Caldwell County; and (6) the college spent $30,531 in state aid to train workers for new or expanding industries. Survey forms and financial data are appended. (LAL)

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CALDWELL COMMUNITY COLLEGE AND TECHNICAL INSTITUTE

SPENDING PATTERNS AND THE CALDWELL COUNTY ECONOMY

An Economic Impact Study

by

Claudia Kincaid
Candace Tippett

Educational Development
Office of Research and Planning

June 1984

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A special word of appreciation goes to those instructors who conducted the student surveys in selected classes.

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REPORT HIGHLIGHTS

- Full-time student spent locally an average of $5,665.
- Faculty/staff person spent locally an average of $13,628.
- Direct spending by college faculty and staff and students totaled: $6,354,272.
- Purchases of the college amounted to $1,433,733.
- Since each dollar of direct spending turns over several times, the total impact on Caldwell County was calculated at $9,658,494.
- The local multiplier was found to be 1.52 which means that for each dollar spent, an additional 52¢ of income is generated.
- The college directly provides 130 to 140 full-time and more than 300 part-time jobs each year for a total payroll of $2,873,491.
- Student spending generated an estimated 75 full-time jobs in the county.
- Eighty-six percent of the full-time students and 72% of the part-time students said they would be enrolled elsewhere if the college were not located in Caldwell County.
- In the fiscal year 1983, an additional $30,531 was spent to train 83 workers for 3 expanding industries in Caldwell County.
- CCC & TI ranks 11th in the county both in number of employees and in gross payroll.

OBJECTIVES

Since an economic impact study covers two phases of influence upon the community, the objectives of each will be dealt with separately.

I. The short term or direct economic impact is the consequence of the day-to-day expenditures of the college upon the local economy. The effect of this total relationship is generally acknowledged by the community to be a positive one; however, until a study of the flow of money is made, quantitative information is unavailable.

This study proposes to

- measure the multiplier effect of income spent by the college and by those who work in or go to school at the institution
- relate student spending to the creation of jobs in the community
- provide background to aid in the formulation of the communication relations and the resource development plans
- promote awareness of this secondary role of the institution

II. The long term or indirect impact - the primary objective of the school - is the consequence of the educational training offered by the college. The notion that a direct relationship exists between level of education and quality of life is universally accepted. Again, some method of measurement is needed in order to determine exacts; establishing such methods proves to be difficult.

This limited study proposes to

- show that educational levels have a bearing on an individual's employment/unemployment, and
- point out the economic advantage to industry of a trained potential work force.

HISTORY

For several years, the Executive Council of Caldwell Community College and Technical Institute (CCC & TI) acknowledge the importance of being able to assess the economic impact of the institution upon the local area. In a time of declining resources and increased attention on accountability, the urgency for this study has become more apparent.

In 1979, the educational development team investigated the feasibility of a local study and arrived at the following conclusions: (1) that a computerized, adapted version of Caffrey and Isaacs model, Estimating the Impact of a College or University on the Local Economy, could be used in conducting the short term study, and, (2) that a study of the long term economic impact or human capital investment tends to be more general and speculative and involves complicated data gathering processes. Table 1 summarizes the background research that was conducted.

In 1983, the office of educational development established the designing and testing of an impact study as an the institutional goal and set June 30, 1984 as the date of completion. In the initial planning stages, the research staff recognized several difficulties. Since few community colleges have conducted economic impact studies, there is no established model available for the two-year school and there are few consultants available to help with such a study.

During the early fall, a request for aid was made to the North Carolina Department of Community Colleges. Personnel there suggested contacting Dr. Charles Salley, producer of a nationally recognized economic impact model. He came to North Carolina in January 1984 to

conduct a workshop concerning the use of his model. As a result of their attendance at the workshop, the college research staff recommended that Salley be asked to serve as a consultant to CCC & TI. He was asked to provide assistance in modifying and employing his model which appeared to be more suitable for CCC & TI's use than the Caffrey and Isaacs model.

After they had learned more about the processes involved in an economic impact study, the staff decided to confine the short term study to the Hudson campus in Caldwell County and to develop a limited long term study based on data already available. These changes represented the revision of two of the original goals: that of including the Watauga Division of CCC & TI in the study and that of doing a full indirect impact study for the two counties.

The collecting of the data, the choosing of the method of data treatment where alternatives existed and the writing of the report were done by the college staff; the selecting and the weighing of the appropriate data were done by the consultant.

The Salley model was chosen for two reasons. First, it provides for the computation of a local multiplier peculiar to Caldwell County. Secondly, it contains a twelve part outline that can serve initially as a guide for the researcher preparing for the study and, ultimately, as a vehicle for the development of pertinent information needed for the report.

PLAN OF STUDY - DIRECT IMPACT

The plan of this report is based upon the methods suggested by the consultant, Dr. Charles Salley, with appropriate adaptations suitable for the local institution and Caldwell County.

The estimate of the direct economic impact upon the community is a summary of information from six sources:

(1) Collection of institutional enrollment, payroll and purchasing data.

(2) Survey and estimation of faculty/staff spending.

(3) Survey and estimation of student spending.

(4) Calculation of the local multiplier.

(5) Calculation of employee equivalent of student spending.

(6) Computation of the school's total impact on local community income.

Source of Data

Total school expenditures data, including gross payroll, were supplied by the business office. At the time this report was being written, complete figures for year 1983-84 were not yet available; therefore, the amounts used were for the 1982-83 year. (See Suggestions for Future Studies.) The business office also supplied personnel data.

The registrar and the director of admissions supplied the student enrollment data for spring quarter 1984, the breakdown of the student population categories, and the in-county/out-of-county resident numbers.

Data from two earlier surveys were taken from information on file in the office of research and planning: earnings of former graduates

and the make-up of the study body as to independent or dependent types of students.

Processes

The itemized list of total expenditures for the college in 1982-83 was grouped according to the Standard Industrial Classification (SIC) used by the Department of Commerce, since local value-added and sales-payroll are published by the SIC codes (Appendix 2). This latter information was found in three publications: 1977 Census of Retail Trade, 1977 Census of Wholesale Trade and 1977 Census of Service Industries.

Spending pattern survey sheets were provided to 100% of the full-time and part-time Hudson campus faculty and staff who work thirty or more hours. Two forms were used: one for Caldwell County residents, the other for those who live outside of the county.

Student spending pattern survey instruments were provided to all day and evening English classes, to day cosmetology, to Level I nursing and to evening auto body, auto mechanics and one business class. In selecting specific day classes, an attempt was made to survey 50 percent of the full-time students with a proportional representation from the college parallel, technical, and vocational areas. Forty-one percent of the student population was actually surveyed.

The target population was primarily full-time students, but a sampling of part-time students was also included. Those enrolled under "special credit" designation were not used either as part of the total enrollment figures or as part of the sample spending profile.

The calculation of the local multiplier (Appendix 9) was determined through use of a process formulated by Salley; it consists of a series of computations using employee spending, college payroll, and college purchases. Once established, the multiplier (which was found to be 1.52) is used in estimating the induced additional value of each dollar spent. This study found that for each dollar which the college spends, an additional 52¢ of income is generated in the county.

The completed information shown in Appendices 2, 5, 8 and 9 provided the material upon which to base conclusions (Appendix 10) as to the overall economic impact of the college upon Caldwell County. It is well for those who use these conclusions to be cognizant of the fact that they are estimates only. There is no known method to measure exactly the income generated by the responding of each dollar.

As a final computation of the study data, the calculation of employee equivalent of student spending was done. The results of the student spending survey, the sales in the county and the number of

employees in the various SIC divisions in the county were used. The result of this calculation was an estimate of the number of jobs in Caldwell County that are generated by student spending (Appendix 11-12).

Results

The measurable direct impact on the economics of Caldwell County comes from three sources: the purchase of goods and services by the college, the spending patterns of faculty and staff who are employed by the college, and the spending patterns of the students who attend the college.

Total college purchases were $1,433,733; however, not all of this remained in the county. According to the Census figures, the amounts in the various SIC divisions that do remain in the local economy range from 12% (.119) for trade purchases to 41% (.413) for finance/insurance and business services. Calculations, using the Census figures, indicated that $343,079 of the total expenditure did go into local payrolls (Appendix 2).

The annual local spending of the Hudson campus faculty and staff was estimated from the surveys to be $13,628 for those who live in the county, and $1,924 for those who live outside the county (Appendices 8 and 8A). Total local spending by 134 full-time people was $1,369,731. This is a ratio of .642 of local spending to total full-time payroll ($2,133,941).

Since there were a large number of part-time employees, the estimate of spending by those people was computed by finding the same ratio of local spending (.642) to part-time payroll ($739,550). The

total was $474,791. Combined local spending of both full and part-time faculty/staff was estimated to be $1,844,522 (Appendix 10).

All students commute and most continue to live at home during their time of enrollment. Many live in Caldwell County, while others come in from other counties; almost none move to the area in order to attend. Some are full-time; others are part-time students. Approximately 40% are dependents living with parents, 33% are heads of households, and the remaining 27% are independents but not heads of households (Appendices 5, 5A, 5B, 5C).

This study estimates that these various groups of students spend $3,076,018 annually.

Total initial college spending from the three sources described above amounted to $6,354,272. When this amount is increased by the local multiplier of 1.52, the total impact is $9,658,494 (Appendix 10).

Finally, the jobs generated in the county by student spending were estimated to be 75 (Appendix 12).

	N	percent*		annual average		
Full-time Caldwell County	384	X 86%	= 330 X	$5665.00	=	$1,869,615
Full-time Out of County	215	X 86	= 185 X	1935.00	=	357,975
Part-time Caldwell County	558	X 72	= 402 X	1609.92**	=	647,188
Part-time Out of County	174	X 72	= 125 X	1609.92***	=	201,240
				Total student spending		$3,076,018

*In answer to a survey question relative to enrollment at CCC & TI, 86% of the full-time and 72% of the part-time students said they would be enrolled elsewhere if the college were not here; these percents were used (instead of 100%) in order to be conservative.

**Since the actual figure of $3,279 appeared to be high, the $1,609.92 amount for out-of-county was used in order to be conservative.

***From the student survey.

PLAN OF STUDY - INDIRECT IMPACT

Despite the fact that the consequence of educational training is the primary mandate of the college, measuring such an indirect impact involving human capital investment proves difficult. The literature on the subject indicates that such a study tends to be general, speculative and complicated. The consultant chosen for the project suggested that the college not become involved in such an in-depth study during this initial effort. Therefore, no attempt was made to investigate fully the indirect impact. (See Suggestions for Future Studies.) Instead, use was made of data on file in the office of research and planning and in publications of the Employment Security Commission.

In its original statement of purpose, the staff included the study of such factors as reduced poverty and unemployment, increased productivity of the work force, and reduced industry training costs. This report briefly addresses three of the areas.

Results

Characteristics of applicants for unemployment benefits in Caldwell County were examined for the periods of July and December 1983 (Table 2). In both cases, persons who had had training beyond the high school accounted for only 15-16% of those seeking jobs.

There were 356 Caldwell Community College and Technical Institute graduates in 1983 (more than 2,700 since the college was founded). Statistically, some 212 of the graduate group would have been employed during the periods involved.

Further, applicants for benefits who had finished high school made up some 38% of the unemployed, while those without a high school diploma ranged between 40-50% of the total. In 1983, 239 persons completed the high school equivalency/GED (over 3,600 persons have done so since the college was founded). The projected employed number for these graduates would be 148.

In theory, had neither group sought additional training, there could have been some 216 without jobs instead of 132.

Conclusion: Both high school training and training beyond are positive factors in an individual's employment status in Caldwell County.

According to the 1980 Employment Security Research Bulletin listing hourly wage rates by occupations in Caldwell County, the range for all areas that had one hundred or more jobs was $3.94 to $7.28 per hour (the latter was in one area only: upholstering; there were only three areas in the six dollar range). According to the North Carolina Community College follow-up survey of 1980-81, CCC & TI graduates averaged $6.29 per hour. The Lenoir-Caldwell County Chamber of Commerce reports that $5.47 per hour is the average wage rate for all occupations in the area.

Conclusion: The CCC & TI graduate is faring better than the majority of the wage earners in the county with his/her above average weekly salary.

Since they are able to secure employment and to earn more than the average amount, graduates, early leavers with skills, and high school graduates are having a positive impact on the economics of Caldwell County.

There are two ways in which the college is able to aid industry in reducing training costs:

First, graduates and early leavers with skills require a shorter training period once they are employed. From the 1983 graduates, for example, thirty-two people completed the machine shop/tool and die programs; ninety-four completed allied health curricula; fifteen completed data processing degrees, etc. People with such specialized training are prepared to enter various industries with little more than minimum orientation.

Second, the state does provide special funds for the college to train workers for either a new industry or for one that is expanding. In the year ending June 30, 1983, $30,531 was spent to aid three such industries in the county:

	Number of employees trained	Amount spent
Duff-Norton	20	$ 4,689
Yale/Eaton	44	14,942
Butler Polymet	19	10,900

The fact that the college is available to help with training appears to be an influencing factor in the choice of location for new industry. The management of Yale Corporation (formerly Eaton Corporation) stated the training the college could provide, and their interest in providing such training, strongly influenced the decision to locate a new plant in Caldwell County (Lenoir News-Topic, February 26, 1983).

Even though other hard data by which to measure the long term impact upon the area is missing, it appears valid to make a concluding generalization:

Conclusion: a better-trained workforce who can maintain a reasonable standard of living will contribute to the economic, the social and the cultural bases of both self and community through an on-going process.

SUGGESTIONS FOR FUTURE STUDIES

1. Plan the report to cover a fiscal year (July 1 - June 30) so that all data is for the same year.

2. Set October 1 as date for completion of report (this will insure the availability of final business office records).

3. Do all surveying the middle of fall quarter.

4. Involve the controller in the initial planning stage. Discuss the specific financial information that will be needed (changes are planned in the charting of accounts which may change the form in which the information is kept).

5. Coordinate the year of the report with available, current census information (economic census material is collected in years that end in 2 and 7, i.e., 1977, 1982, etc.; published material may not be ready for another two years).

6. Produce a more comprehensive indirect economic impact report.

7. Literature relating to the economic impact study suggests that such a study should be made every three to five years.

See next page for consultant's suggestions.

SUGGESTIONS FOR TIMELY UPDATES

I. Need for Timely Updates

Because the economic impact study broadcasts positive contributions of CCC & TI, the study results should be used continuously in the school's publications. Consequently, the dollar amounts and employment counts generated by CCC & TI's instructional operations should be up-to-date.

Annual recalculation of the full study is not practical in view of the great demands on resources and personnel to conduct spending surveys. Happily, such calculation is not a frequent necessity since basic spending patterns and the commercial structure of Caldwell County are not likely to change significantly from one year to the next.

II. The Annual Update

A simple, yet accurate, annual update may be conducted as follows:

A. Obtain current enrollment and faculty/staff data from the registrar and personnel office.

B. Obtain current payroll and expenditure data from the business office.

C. Obtain the price level change since the initial study from the Federal Reserve Bulletin. Price indices for the U.S. are listed in the appendix of each monthly issue.

D. Calculate initial spending in Caldwell County using existing spending survey results and updated student and faculty/-staff headcounts. Multiply this total spending for students and for faculty/staff by the price change index (example: $1,000,000 X 1.03 = $1,030,000.). Multiply business office expenditures by the price change index. Sum these to obtain a price-adjusted initial spending total for the current year.

E. Multiply this figure by the 1.52 multiplier to obtain the total level of initial plus induced spending in Caldwell County.

F. Use this updated figure in current publications.

III. The Third-Year Update

The 1.52 multiplier, unique to CCC & TI expenditures in Caldwell County, will remain valid until there are major shifts in wholesale, retail, and service establishments in the county or major personal expenditure changes, i.e. an auto assembly plant locates in the county or mail-order groceries are available from out-of-county!

Such changes in business establishings can be detected upon release of the 1980 census data, probably in 1985. (The present study has used the latest available data which is 1977.) The new sales-local-payroll percentages, if significantly different from those used in the original study, can be used in the third-year update. This entails a recalculation of the local value-added figures for college purchases and the employee equivalents of student spending. All other calculations are as in (II) above, except that the multiplier is also recalculated.

IV. The Five-Year Update

Full recalculation of spending surveys may wait until five years after publication of the original study. At that time, all surveys are repeated, current headcount and budget data are used, and the 1980 or most recent local payroll-sales figures are used. This is a complete update.

Charles D. Salley
May 18, 1984

REFERENCES

Posey, Ellen. Georgia State University Spending Patterns and the Atlanta Economy, 1983, Institutional Research Report No. 84-2. Atlanta, Georgia: Georgia State University, 1983.

Salley, C. D. Calculating the economic multiplier for local university spending. Research and Planning for Higher Education. Tallahassee, Florida: Association for Institutional Research, 1978.

Agencies to contact for material:

Employment Security Commission
Lenoir, NC

Lenoir-Caldwell Chamber of Commerce
Lenoir, NC

State Data Systems
NC Department of Budget and Management
116 West Jones Street
Raleigh, NC 27611
(919) 733-7061
(can supply published and unpublished Census data)

US Census Bureau
Information Service Program
230 S. Tryon Street, Suite 800
Charlotte, NC 28202
(704) 371-6144
(County Business Patterns publication available here)

Western Piedmont Council of Government
30 3rd Street, NW
Hickory, NC
(704) 322-9191
(Unifour Urban Area - An Economic Atlas and Census information available here)

APPENDICES

Table 1

REVIEW OF LITERATURE

SELECTED ECONOMIC IMPACT STUDIES*

Title	Author	Place	Date	Comments
Economic Impact Study (A "How To" Manual)	Caffrey and Isaacs	American Council on Education	1971	Excellent guidelines – must be modified for 2-yr. colleges
The Economic Impact of the Long Beach Community College District	Littlefield, William	California	1981	Examines the direct and indirect impacts of the college on the economy
Conducting Community Impact Studies: A Handbook for Community Colleges	Armijo, J. Frank	NCHEMS	1978	Basic guidelines for organizing and conducting impact studies. Includes economic, educational, social and technological effects.
Economic Impact of Community Colleges on Local Economics	Phillips, James A.	Cypress College, California		Has some pitfalls to avoid.
Economic Impact Manual	Linthicum, Dorothy	Maryland Community Colleges	1978	Three-part series. Designed to provide updated data on a regular basis.
A Study of the Economic Impact of Six Community Colleges		Illinois	1980	Modification of Caffrey and Isaacs model. Randolph Tech used this method.

* This has been prepared in conjunction with Objective 1 for the first quarter of the Title III Economic Impact Study (November 1983).

Table 1 (Cont'd)

Title	Author	Place	Date	Comments
Economic Impact of Mercer County Community College on the Local Economy	Baum, Stanley	Trenton, NJ	1978	Includes economic models and a list of data sources.
The Impact of the College on the Local Economy	Selgas, James	Harrisburg, Penn.	1973	
Economic Impact of Chemeketa Community College	Moore	Oregon	1975	
Economic Impact of Rockland Community College	Poris and Eskow	New York	1978	
Strategy for an Economic Impact Study	Salley, Charles Posey, Ellen	Georgia State Univ.	1976 (update 1983)	Designed to determine a local multiplier. Contains twelve "examples" which serve as outlines for the gathering/processing of data.

ST COPY AVAILABLE

Table 2

EDUCATIONAL CHARACTERISTICS OF APPLICANTS FOR UNEMPLOYMENT BENEFITS

Caldwell County

		Level of Education			
	Total Applicants	Elementary (0-7)	High School (8-11)	High School Graduate	Over 12 years
July 1983	1,927	121 (.06%)	747 (38%)	748 (38%)	311 (16%)
December 1983	1,475	64 (.04%)	533 (36%)	645 (43%)	233 (15%)

Information from Table 93, Characteristics of the Active File, Employment Security Commission.

Appendix 1

COLLEGE DATA - HUDSON CAMPUS

1. Student Population - Spring 1984

	County Residents	Out-of-County Residents	Total
College - full-time	108	62	170
part-time	84	44	128
Technical - full-time	221	130	351
part-time	293	74	367
Vocational - full-time	55	23	78
part-time	181	56	237
Special Credit			378
			1,709

2. Faculty/Staff Population:

Full-time	134
Part-time	20
(30-39 hrs.)	
Other part-time	370

3. Local College Expenditure (fiscal 83) $1,433,733

4. Gross College Payroll (fiscal 83)

full-time	$2,133,941
all part-time	739,550
	$2,873,491

Appendix 2

CALCULATIONS OF INITIAL IMPACT BY COLLEGE PURCHASES (1982 - 1983)

USING LOCAL VALUE-ADDED RATIOS

(1) Item	(2) Amount of Purchases	(3) SIC Codes	(4) Payroll/Sales* Ratio	(5) Local Value Added Amount (2) x (4)
Employee Travel and Benefits	$ 516,566	7,000	.283	$146,188
Taxes and Utilities	146,699	NA	.397	58,240
Trade Purchases (Wholesale & Retail)	484,733	5,300	.119	57,683
Finance and Insurance	13,222	7,300	.413	5,461
Rental				
Repair Service	87,732	7,600	.283	25,267
Business Services	92,891	7,300	.413	38,364
Vehicle Repair and Service	9,221	7,500	.221	2,038
Other	82,669	5,300	.119	9,838
TOTAL	$1,433,733			$343,079

NOTE: Local value added ratio is found by dividing payroll by sales. (The payroll figure is the percent of local purchases that stays in the county.)

*Payroll/sales ratios are calculated from data presented in:
Census of Retail Trade, U.S. Department of Commerce 1977, NC, p. 34-8.
Census of Service Industries, U.S. Department of Commerce 1977, NC, pp. 34-7, 8, 63.
Census of Wholesale Trade, U.S Department of Commerce 1977, NC, pp. 34-43.

Appendix 3

MEMORANDUM

TO:

FROM: Claudia Kincaid

DATE: March 1, 1984

Candace Tippett and I need to ask a favor: would you be willing to survey the students in your English classes during the second week of the new quarter? We are continuing to work on the economic impact study and students' spending patterns figure into the overall picture. Since it is so difficult to catch technical and transfer students in other classes - and catch them only once - the English classes seem to be the most logical place to begin.

If you are willing to do this, you need not respond; about March 12 we will supply you with the forms. If you are unable to participate, let Candace know. Attached is a sample copy of the survey.

Thank you.

Appendix 3A

MEMORANDUM

TO:

FROM: Claudia Kincaid

DATE: March 9, 1984

SUBJECT: Economic Impact Survey - Student Survey

Here are the survey sheets for the economic impact study. I have used Helen Gitlin's student count for the new quarter and have added a few extra to take care of changes.

Give these to your classes on March 13 and 14 and return completed (and extra) sheets to Candace Tippett immediately thereafter.

Please ask students to be as accurate as possible in making their estimates of monthly spending in the several areas and assure them that confidentiality will be maintained.

A married student may ask if expenditures made by a spouse are to be counted. The most valid way to approach this situation is for the student answering the questionnaire to consider only amounts spent BY and/or FOR himself/herself.

If you have questions, call Candace at Ext. 221.

Thank you so very much.

STUDENT SURVEY Economic Impact Study

3/84

Purpose: CCC & TI is doing a study to determine the degree of influence the college has upon the economic situation in Caldwell County. The school budget is one factor; another factor is the spending patterns of the people here at the school. Would you please help us with this study by providing the following information? DO NOT SIGN YOUR NAME.

1. Check one: college transfer____ technical____ vocational____ Sp. Credit____ 1.____
2. Number of credit hours you are taking this quarter: 12 or more____ 6-11____ 1-5____ 2.____
3. Would you be attending another college outside of Caldwell County if CCC & TI were not here? yes____ no____ 3.____
4. Do you live in Caldwell County? yes____ no____ 4.____
5. Did you move to Caldwell County in order to attend CCC & TI? yes____ no____ 5.____
6. Check one: dependent (lives with parents)____ independent (head of household)____ independent (not head of household)____ 6.____
7. Please complete either A or B below: (whichever is applicable to you)

A. CALDWELL COUNTY RESIDENTS

Please estimate your AVERAGE MONTHLY expenditures within the county. Complete each blank if you do not spend any money in an area listed, write zero in that blank.

a.	Rent or house payment	$_____	a._____
b.	Utilities (gas, water, phone, lights)	_____	b._____
c.	Food used at home and household items	_____	c._____
d.	Eating out (restaurants, fast foods)	_____	d._____
e.	Entertainment (movies, sports, etc.)	_____	e._____
f.	Automobile (payments, repairs, gas insurance)	_____	f._____
g.	Other transportation (carpooling, etc.)	_____	g._____
h.	Clothing	_____	h._____
i.	Personal service (clothes and hair care, day care, etc.)	_____	i._____
j.	Health services (include insurance)	_____	j._____
k.	Furniture and appliance purchases (for monthly amount, divide 9 into total spent during last nine months)	_____	k._____
l.	Books and school supplies (divide quarter bill by 3 to get monthly amount)	_____	l._____
m.	Other (do not include tuition)	_____	m._____

B. PERSONS WHO LIVE IN OTHER COUNTIES AND COMMUTE TO CCC & TI

Please estimate your AVERAGE MONTHLY expenditures while you are in Caldwell County. Complete each blank. If you do not spend any money in an area listed, write a zero in that blank.

n.	Eating out (restaurants, fast foods)	_____	n._____
o.	Automobile (gas, repairs)	_____	o._____
p.	Personal services (clothes, hair care, day care)	_____	p._____
q.	Clothing	_____	q._____
r.	Books and school supplies (divide quarter bill by 3 to get monthly amount)	_____	r._____
s.	Other (do not include tuition)	_____	s._____

Thank you for your help. Please return this sheet to your instructor.

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Appendix 5

ESTIMATION OF STUDENT SPENDING (SPRING 1984)

FULL-TIME CALDWELL COUNTY STUDENTS

STRATIFIED RANDOM SAMPLING

N		College	Tech	Voc	Ind. Head of Household	Ind. Not H.H.	Dependent
Population	384 (100%)	108 (28%)	221 (58%)	55 (14%)	127 (33%)	104 (27%)	153 (40%)
Sample	178 (100%)	75 (42%)	76 (43%)	27 (15%)	34 (19%)	31 (17%)	113 (64%)

Spending Category	Sample Annual Average*	Weighted Annual Average**
Housing	$ 565.00	$ 830.70
Utilities	454.00	628.80
Food and Household	739.00	971.60
Eating Out	328.00	360.50
Entertainment	203.00	216.30
Automobile	785.00	839.60
Other Transportation	44.00	241.10
Clothing	480.00	469.40
Personal Services	209.00	216.70
Health Services	222.00	237.20
Furniture & Appliances	88.00	115.00
Books & Supplies	378.00	401.10
Other	121.00	137.50
TOTAL	$4,616.00	$5,665.50

*12 months for vocational
9 months for college/tech.

**Weighting factors are ratios of total population enrollment to total for Head of Household. Not H.H. Dependent. Factors based on H.H. status rather than on majors (col., tech., voc.) because deviation of sample to population distribution is greater by the designation used.

Appendix 5A

ESTIMATION OF STUDENT SPENDING (SPRING 1984)

FULL-TIME OUT OF COUNTY STUDENTS

STRATIFIED RANDOM SAMPLING

N	College	Tech	Voc	Ind. Head of Household	Ind. Not H.H.	Dependent
Population 215 (100%)	62 (29%)	130 (60%)	23 (11%)	71 (33%)	58 (27%)	86 (40%)
Sample 76 (100%)	40 (52%)	21 (28%)	15 (20%)	20 (26%)	8 (11%)	48 (63%)

Spending Category	Sample Annual Average	Weighted Annual Average
Eating Out	$ 218.00	$ 222.00
Automobile	590.00	637.50
Clothing	235.00	204.10
Personal Services	244.00	340.80
Books & Supplies	439.00	425.00
Other	162.00	105.30
TOTAL	$1,888.00	$1,934.70

Appendix 5B

ESTIMATION OF STUDENT SPENDING (SPRING 1984)

PART-TIME CALDWELL COUNTY STUDENTS

STRATIFIED RANDOM SAMPLING

	N	College	Technical	Vocational
Population	558 (100%)	84 (15%)	293 (53%)	181 (32%)
Sample	107 (100%)	21 (19%)	52 (49%)	34 (32%)

Spending Category	Sample Annual Average*
Eating Out	$ 432.00
Automobile	1,680.00
Clothing	468.00
Personal Services	264.00
Books & Supplies	336.00
Other	99.00
TOTAL	$3,279.00

*Weighting unnecessary since sample distribution is very close to population distribution. Annual = 12 months for all part-time students.

Appendix 6

MEMORANDUM

TO: Faculty and Staff

FROM: Candace Tippett/Claudia Kincaid

DATE: March 1, 1984

SUBJECT: Economic Impact Study

Institutional plans for 1984 include the development of a report dealing with the impact of the college on Caldwell County economics. Outside money that comes into the county through the college, along with the spending of individuals who work here (or go to school here - there will also be a student survey), filters through the economy as re-spent income and creates a multiplier effect relative to jobs and income in the community.

In preparing for this survey, we have studied several models for the collection of needed data. We have selected one developed by Dr. Charles Salley, a Florida business economist, who is serving as consultant for this project.

Would you please help us identify certain spending patterns by completing the attached survey? Personal anonymity will be maintained.

Please remove this sheet, fold and staple the survey and return it to Candace immediately.

Thank you so very much for your cooperation.

County _____

FORM A FACULTY/STAFF ECONOMIC IMPACT SURVEY CCC & TI 2/84

Purpose: The following items are intended to help estimate the economic impact on Caldwell County that the spending patterns of college employees have. All information will be kept confidential and survey sheets will be destroyed after use. DO NOT SIGN YOUR NAME.

1. What is your primary employment status?

full time faculty_____ full time staff_____
part time faculty_____ part time staff_____
(30-39 hours) (30-39 hours)

1._____

2. Please estimate your AVERAGE MONTHLY expenditures. Complete each blank; if you do not spend any money in the area listed, write a zero in that blank.

a. Rent or house payments (includes condo maint. fees)	$_____	a._____ ___ ___
b. Utilities (water, gas, lights, phone)	_____	b._____ ___ ___
c. Food used at home and household items	_____	c._____ ___ ___
d. Eating out (restaurants, fast food)	_____	d._____ ___ ___
e. Entertainment (movies, sports, etc.)	_____	e._____ ___ ___
f. Automobile (payments, repairs, gas, insurance)	_____	f._____ ___ ___
g. Other transportation (carpooling, etc.)	_____	g._____ ___ ___
h. Clothing	_____	h._____ ___ ___
i. Personal services (clothes and hair care, day care, etc.)	_____	i._____ ___ ___
j. Health services (includes insurance)	_____	j._____ ___ ___
k. Furniture and appliances (if purchased in last year, prorate for 12 months period)	_____	k._____ ___ ___
l. Other (not covered above)	_____	l._____ ___ ___

Thank you for your help. Please return this survey per instructions on cover sheet.

FORM B FACULTY/STAFF ECONOMIC IMPACT SURVEY CCC & TI 2/84

Purpose: The following items are intended to help estimate the economic impact on Caldwell County that the spending patterns of college employees have. All information will be kept confidential and survey sheets will be destroyed after use. DO NOT SIGN YOUR NAME.

1. What is your primary employment status?

full time faculty_____	full time staff_____	1._____
Part time faculty_____ (30-39 hours wk.)	Part time staff_____ (30-39 hours wk.)	

2. Please estimate your AVERAGE MONTHLY expenditures in Caldwell County. If you do not spend any money in the areas listed, write zero in that blank.

c. Food to be used at home and household items	$_____	c. _____ _____ _____
d. Eating out (restaurants, fast food)	_____	d. _____ _____ _____
f. Automobile repairs and gas	_____	f. _____ _____ _____
h. Clothing	_____	h. _____ _____ _____
i. Personal services (clothes and hair care, day care, etc.)	_____	i. _____ _____ _____
e. Other (not covered above)	_____	e. _____ _____ _____

Thank you for your help. Please return this survey per instructions on the cover sheet.

Appendix 8

ESTIMATION OF CALDWELL COUNTY FACULTY/STAFF SPENDING (SPRING 1984)

STRATIFIED RANDOM SAMPLE

N	Full-Time Faculty	Full-Time Staff
Population 95 (100%)	41 (43%)	54 (57%)
Sample 53 (100%)	21 (40%)	32 (60%)

Spending Category	Sample Annual Average	Weighted Annual Average*
Housing	$2,922	$2,805.24
Utilities	1,644	1,638.96
Food and Household	2,586	2,493.36
Eating Out	708	708.00
Entertainment	390	379.08
Automobile	1,890	1,919.40
Other Transportation	0	0
Clothing	846	841.80
Personal Services	648	626.16
Health Services	870	855.72
Furniture & Appliances	450	472.68
Other	882	887.88
TOTAL	$13,836	$13,628.28

*Weighting factors are the ratios of faculty/stafff responses in each category to the population total.

Appendix 8A

ESTIMATION OF OUT OF COUNTY FACULTY/STAFF SPENDING (SPRING 1984)

STRATIFIED RANDOM SAMPLE

N	Full-Time Faculty	Full-Time Staff
Population 39 (100%)	26 (67%)	13 (33%)
Sample 23 (100%)	16 (70%)	7 (30%)

Spending Category	Sample Annual Average	Weighted Annual Average
Food and Household	$ 540	$ 637.92
Eating Out	228	195.36
Automobile	342	409.32
Clothing	132	156.48
Personal Services	270	135.96
Other	330	389.16
TOTAL	$1,842	$1,924.20

Appendix 9

COMPUTATION OF A DIFFERENTIAL EXPENDITURE MULTIPLIER USING LOCAL VALUE ADDED

$$M = 1 + \frac{R}{1 - S}$$

where R = initial spending
S = re-spending ratio

A. Computation of r, the proportion of total college spending that is spent locally.

1.	Local consumption by college employees (survey)	$1,944,522
2.	Gross payroll to college local employees (full & part-time)	2,873,491
3.	Portion of payroll spent locally (1) divide by 2 = (Proxy for all local payroll spending)	.642
4.	Value added by college's local purchases (Appendix 2)	343,079
5.	Initial local income generated by purchases (3) x (4) =	220,256
6.	Total initial local spending (1) + (5) =	2,064,778
7.	Total college spending (all purchases + 2) = $1,433,733	4,307,224
8.	Ratio of initial local spending to total spending (6) divided by (7) =	.479

B. Computation of s, secondary local spending induced by initial local spending.

9.	Local value added by total local spending (6) x (.119*) =	245,708
10.	Induced local spending (9) x (3) =	157,744
11.	Ratio of induced local spending to initial local spending (10) divided by (6) =	.076

C. Computation of multiplier.

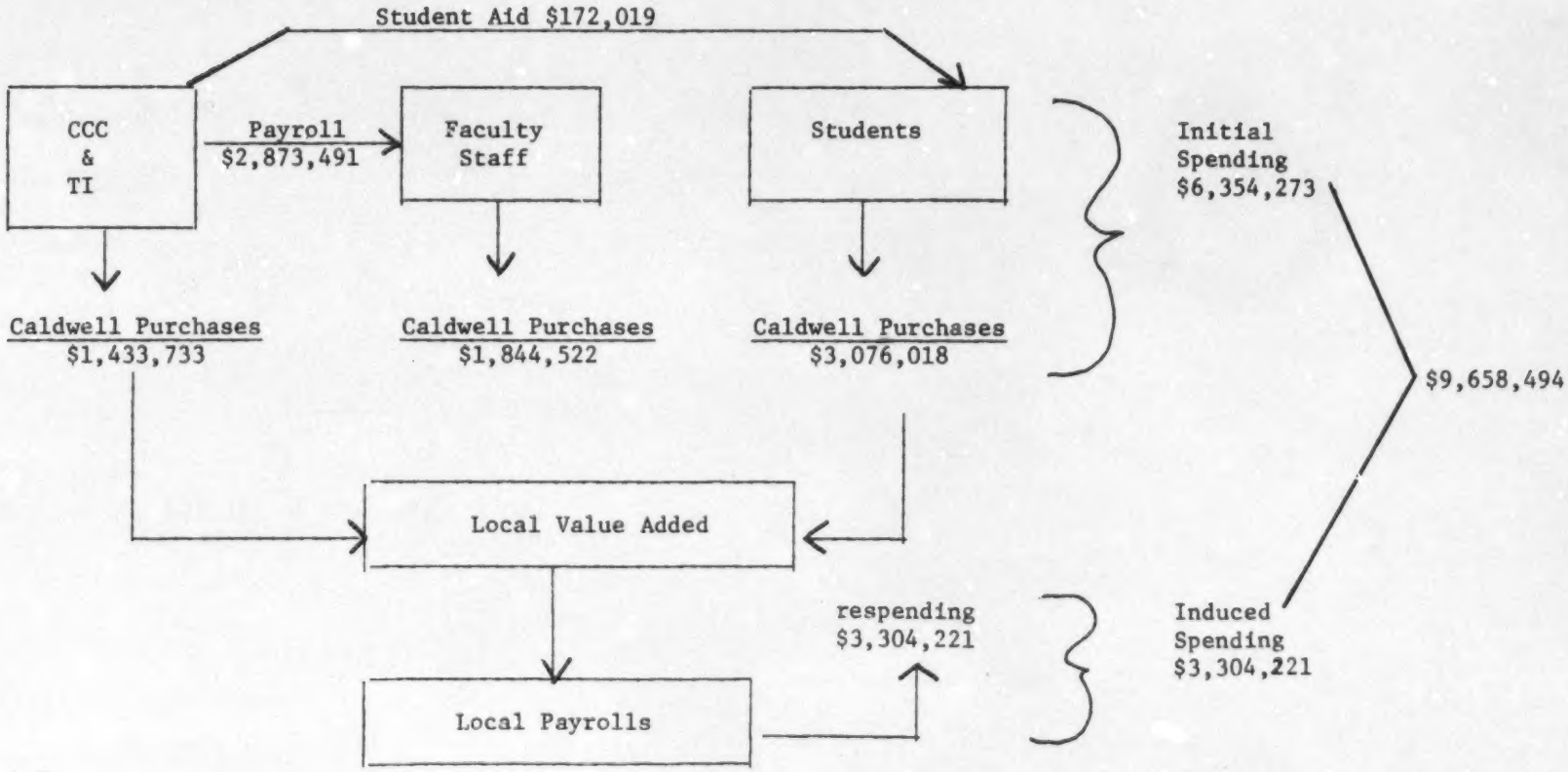
12.	1.000 - (11) =	.924
13.	(8) divided by (12) =	.518
14.	1.000 + (13) =	1.518 (1.52 is Caldwell Co. multiplier)

*Local Trade Purchase, Payroll Sales, Appendix 2

Appendix 10

COMPUTATION OF IMPACT

SPENDING PATTERNS FOR 1983-84



Appendix 11

SALES/EMPLOYEE RATIOS

(1) Sector	(2) SIC Code	(3) Sales* (000's)	(4) Employees	(5) Sales/Employees (3) ÷ (4)
Books and Supplies	594	$ 1,340	33	$ 40,606
Food & Household	540	39,043	480	81,340
Eating Out	581	7,407	462	16,032
Entertainment	780	234,522**	9,022	25,994
Automobile	554-5	58,660	401	146,284
Clothing	560	4,513	176	25,642
Personal Services	720	17,027	624	27,287
Health Services	591	4,553	97	46,938
Furniture & Appliances	570	7,841	118	66,449
Housing				96,427***
Utilities				26,542***
Other	590	$12,595	145	$86,862

*Census of Retail Trade, U.S. Department of Commerce 1977, p. 34-28.
**North Carolina Census of Service Industries, 1977, 0. 34-7, 8, 63.
(North Carolina ratio used)
***J. Wilson, "Economic Impact of a University on the Local Economy," Kent State Univ., pp. 148 & 153.

Appendix 12

CALCULATION OF EMPLOYEE EQUIVALENT OF STUDENT SPENDING

(1) Student Spending Category	(2) Annual Amount of Local Purchases*	(3) Local Sales/Employee**	(4) Employee Equivalent (2) div. by (3)
Books & Supplies	$ 342,648	$40,606	8
Food & Household	320,760	81,340	4
Eating Out	277,194	16,032	17
Entertainment	71,280	25,994	3
Automobile	731,456	146,284	5
Clothing	300,348	25,642	12
Personal Services	314,402	27,287	11
Health Services	78,210	46,938	2
Furniture & Appliances	37,950	66,449	1
Housing	274,230	96,427	3
Utilities	207,570	26,542	8
Other	119,970	86,862	1
TOTAL	$3,076,018	$686,403	75

*Data from Student Spending Survey. (Employment Equivalent generated by local student spending)

**Values from Item 10, col. 5.

Col. 2.....information from Student Survey

**Col. 3.....same figures as Col. 5, Example 10
Col. 4.....divide Col. 2 by Col. 3 for number of jobs in county generated by student spending

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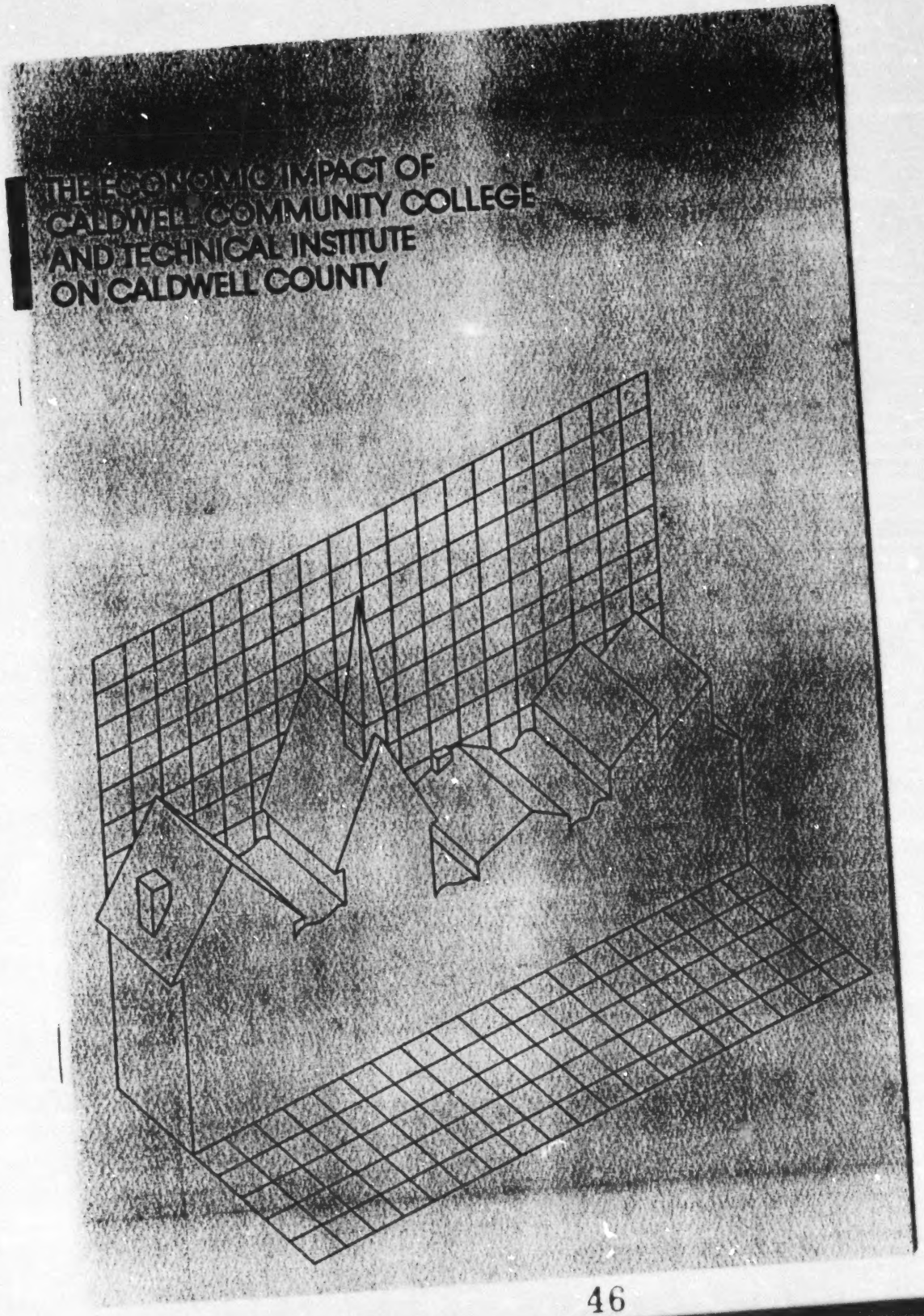

OVERVIEW

This report was prepared to give the citizens of Caldwell County an up-to-date picture of the impact of Caldwell Community College and Technical Institute upon the local economy.

The study of economic impact at CCC&TI included:

- Collection of the institution's enrollment, payroll and spending data
- Survey and estimation of student spending
- Survey and estimation of faculty and staff spending
- Calculation of employee equivalent of student spending
- Computation of the college's total impact on local income

The study was conducted during the Spring of 1984. A stratified random sampling technique was utilized in conducting the surveys incorporated in the study.

The calculation & use of a local multiplier was used in this study to measure the total economic impact of the college on the community.

HIGHLIGHTS

- Full time students spent locally an average of $5665.
- Faculty and staff spent locally an average of $13,628.
- Direct spending by college faculty, staff and students totaled $6,354,272.
- Purchases of the college amounted to $1,433,733.
- Since each dollar of direct spending is respent several times, the total impact on Caldwell County was calculated to be $9,658,494.
- The local multiplier was found to be 1.52. This means that for each dollar spent, an additional 52¢ of income is being generated.
- The college directly provides 130-140 full time and more than 300 part time jobs each year in Caldwell County.
- Student spending generated an additional 75 full time jobs in the county.
- Eighty-six percent (86%) of the full time students and 72% of the part time students said they would be enrolled elsewhere if the college were not located in Caldwell County.
- In fiscal year 1983, an additional $30,531 was spent to train 83 workers for three expanding industries in Caldwell County.
- CCC&TI ranks 11th in the county both in number of employees and in gross payroll.

METHODOLOGY

College-related dollars enter Caldwell County's income through

- Direct institution purchases
- Payroll and faculty/staff spending
- Student spending

These initial spendings include additional rounds of spending that ripple through the local economy making the college's total economic influence a multiple of the initial spendings.

A local multiplier derived specifically for Caldwell County spending patterns was calculated to be 1.52. This means that for each dollar the college spends, an additional 52 cents of income is induced in the county.

Also, student spending alone generated an estimated 75 jobs in the county. These are jobs in addition to the full and part time positions which CCC&TI supports.

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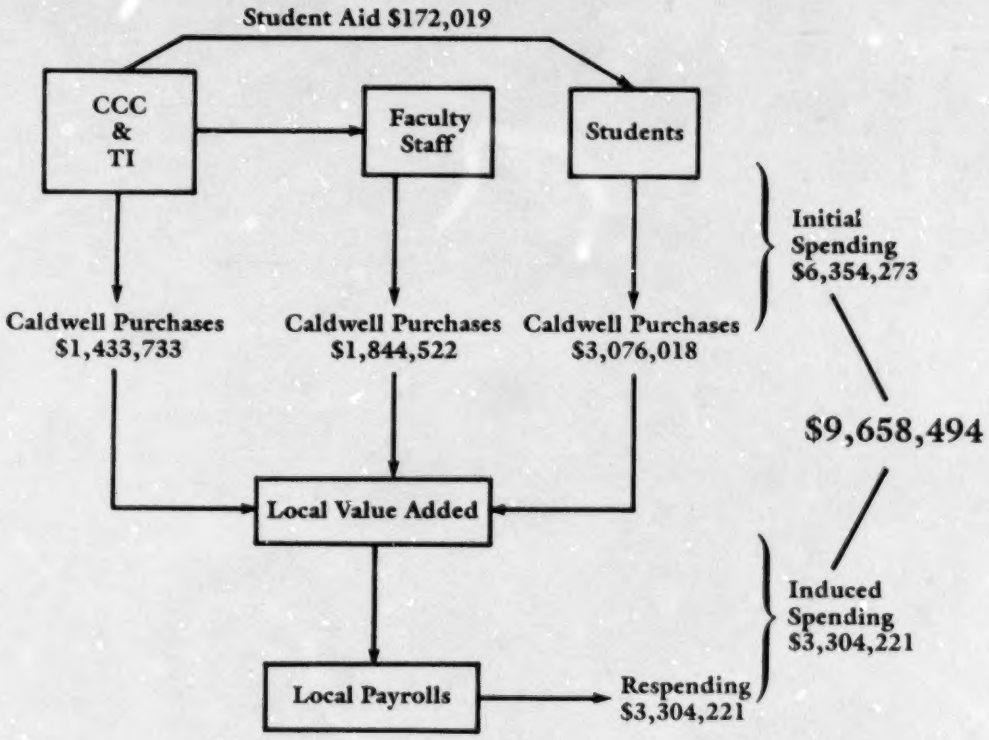
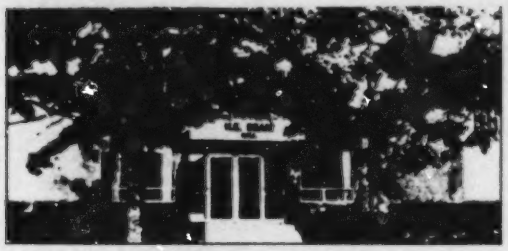
TOTAL ECONOMIC IMPACT OF CALDWELL COMMUNITY COLLEGE AND TECHNICAL INSTITUTE ON CALDWELL COUNTY



COLLEGE PURCHASES

Table 1
Calculation of Initial Dollar Impact by College Purchases
Fiscal Year 1983

Item	Amount of Purchases
Employee Travel and Benefits	$516,566
Taxes and Utilities	146,699
Trade Purchases (Wholesale & Retail)	484,733
Finance and Insurance	13,222
Rental	
Repair Service	87,732
Business Services	92,891
Vehicle Repair and Service	9,221
Other	82,699
Total	**$1,433,733**



FACULTY AND STAFF SALARIES

Table 2
Gross Salaries
Fiscal Year 1983

Full-time employees	$2,133,941
Part-time employees	739,550
Total	**$2,873,491**

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FACULTY AND STAFF SPENDING

Table 3
Caldwell County Faculty/Staff Spending

Spending Category	Weighted Annual Average
Housing	$2,805.24
Utilities	1,638.96
Food and Household	2,493.36
Eating Out	708.00
Entertainment	379.08
Automobile	1,919.40
Other Transportation	0
Clothing	841.80
Personal Services	626.16
Health Services	855.72
Furniture & Appliances	472.68
Other	887.88
Total	**$13,628.28**

Table 4
Out of County Faculty/Staff Spending

Spending Category	Weighted Annual Averages
Food and Household	$637.92
Eating Out	195.36
Automobile	409.32
Clothing	156.48
Personal Services	135.96
Other	389.16
Total	**$1,924.20**

Table 5
Estimation of Part-Time Employees Spending

An estimation of part-time employees spending patterns was made, based on the spending patterns of full-time employees.

$739,550 gross part-time employees payroll x .642 portion of employees payroll that is spent locally.

$474,791

Faculty and Staff	
Full-time Caldwell County	95
Full-time Out of County	39
95 full-time Caldwell County employees x $13,628.28	= $1,294,687
39 full-time Out of County employees x $1,924.20	= $75,044
$739,550 gross payroll for part-time employees x .642	= $474,791
Total	**$1,844,522**

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STUDENT SPENDING

Table 6
Full-time Caldwell County Students

Spending Category	Weighted Annual Average
Housing	$830.70
Utilities	628.80
Food and Household	971.60
Eating Out	360.50
Entertainment	216.30
Automobile	839.60
Other Transportation	241.10
Clothing	469.40
Personal Services	216.70
Health Services	237.20
Furniture & Appliances	115.00
Books & Supplies	401.10
Other	137.50
Total	**$5,665.50**

Table 7
Full-time Out of County Students

Spending Category	Weighted Annual Average
Eating Out	$222.00
Automobile	637.50
Clothing	204.10
Personal Services	340.80
Books & Supplies	425.00
Other	105.30
Total	**$1,934.70**

Table 8
Part-time Caldwell County Students

Spending Category	Sample Annual Average*
Eating Out	$432.00
Automobile	1,680.00
Clothing	468.00
Personal Services	264.00
Books & Supplies	336.00
Other	99.00
Total	**$3,279.00**

*Weighting unnecessary since sample distribution is very close to population distribution.

Table 9
Part-time Out of County

Spending Category	Weighted Annual Average
Eating Out	$231.60
Automobile	492.00
Clothing	211.32
Personal Services	246.84
Books & Supplies	317.28
Other	110.88
Total	**$1,609.92**

384 full-time Caldwell County students x 86%* = 330 x 5665.50	= **$1,869,615**
215 full-time Out of County students x 86%* = 185 x 1935.00	= **357,975**
558 part-time Caldwell County students x 72%* = 402 x 1609.92	= **647,188**
174 part-time Out of County students x 72%* = 125 x 1609.92	= **$201,240**
Total	**$3,076,018**

*Consistent with the methodology of economic impact studies in higher education, the results are calculated for the percentage of students who responded they would be enrolled elsewhere if the college were not here (86% of all full-time students and 72% of all part-time students.)

ACKNOWLEDGEMENTS

This brochure is based upon *Caldwell Community College and Technical Institute's Spending Patterns and the Caldwell County Economy*, Office of Research and Planning, Caldwell Community College and Technical Institute, June 1984, by Claudia Kincaid and Candace Tippett. Dr. Charles Dudley Salley, business economist, provided consulting services to the project.

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